Awareness of Pregnancy-induced Hypertension among Pregnant Women in Bashayer University Hospital, Khartoum State, Sudan (2013)

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Awareness of Pregnancy-induced Hypertension among Pregnant Women in Bashayer University Hospital, Khartoum State, Sudan (2013)

Mazahir Ibrahim Idris Mohammed

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Date: 28 February 2014
Awareness of Pregnancy-induced Hypertension among Pregnant Women in Bashayer University Hospital, Khartoum State, Sudan (2013)

Mazahir Ibrahim Idris Mohammed

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Date of Examination: 25 / 3 / 2014
DEDICATION

Distinctive dedications and devotions are expressed to my honourable mother and father. Their endless love, wisdom and power were the cornerstones of my outstanding achievements.

Secondly to my honourable siblings, who were continuously showing me respect, and support.

And lastly, to my precious nieces and nephews who are the meaning of one's existence, the light of the day, the peace of the night and the joy to my life.
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Firstly, I would like to present my ultimate gratitude to my respected supervisors. Their significant support, cooperation and patience have successfully resulted in a thorough, explicit research. Much appreciation primarily goes to the unforgotten efforts of Dr. Ietimad Ibrahim Abd AlRahman Kambal and Dr. Bothyna Bassyonie Elssayed Etewa. I would like to give thanks to my superb friend, Dr. Eltayeb Baha Al Din, who contributed in this work countlessly. Remote Acknowledgments to the staff of Bashaier University hospital. Lastly and not least. I would like to thank all my colleagues in Al-Gezira University for their outstanding guidance throughout my journey.

Awareness of Pregnancy
**Induced Hypertension among pregnant Women**

**in Bashaier University Hospital, Khartoum State, Sudan**

Mazahir Ibrahim Idris Mohammed

**ABSTRACT**

Hypertensive diseases in pregnet are still presenting a major health problem in worldwide, developed countries and developing countries. A descriptive hospital-based study was conducted aiming at assessing the awareness of pregnant women regarding Pregnancy Induced Hypertension in Bashaier University Hospital , Khartoum state , Sudan , 2013 the study sample consisted of 125 pregnant women who attended the antenatal clinic during the period from 1st of November to 15th December 2013. Data was collected using a questionnaire which designed for the purpose of study. Data analysis performed by using Statistical Package of Social science (SPSS). The results showed that 57.5% of the study sample responded with correct answers regarding the definition of pregnancy correctly, and 68% of them responded with correct but incomplete answers regarding the signs of pregnancy induced hypertension. 80% of the study sample responded with correct answers regarding the preventive measures of pregnancy induced hypertension. And 67.2% of them didn't know symptoms of Pregnancy Induced Hypertension. 74.2% of the study sample didn’t know the methods of diagnosis. 65.6% of the study sample didn’t know treatment. 60.8% of the study sample were adherent to take their prescribed medications regularly. And (80.8% & 89.6%) of the study sample didn't know maternal and foetal complications resulting from Pregnancy Induced Hypertension. 65% of the study sample responded with correct answers regarding the nurse’s role regarding pregnancy Induced Hypertension control. 56.6 of the study sample was followed healthy measures to prevent Pregnancy Induced Hypertension. 89.6% of the study sample practicing light exercise regularly and 55.2% of them were receiving adequate social and psychological support during pregnancy. The study concluded that the awareness of women regarding Pregnancy Induced Hypertension were in adequate. It recommended that periodic health educational program in antenatal care clinic and community for pregnant women about Pregnancy Induced Hypertension must be done.
وعي السيدات الحامل تجاه ضغط الدم (الارتعاج) بمستشفى بشائر الجامعي. ولاية الخرطوم. السودان

مزنر إبراهيم ادريس محمد

ملخص الدراسة
ارتفاع ضغط الدم الناتج عن الحمل ومضاعفاته ما يزال يمثل مشكلة صحية رئيسية في العالم والدول المتقدمة والدول النامية. أجريت هذه الدراسة الوصفية بمستشفى بشائر الجامعي، وشهدت إلى تقييم وعي النساء الحامل تجاه ضغط الحمل في وحدة العناية بالحولام بمستشفى بشائر الجامعي، ولاية الخرطوم، السودان في الفترة من 1/ نوفمبر حتى 15/ديسمبر/ 2013م، تكوّنت عينة الدراسة من 125 إمرأة حامل حضرت لعيادة الحمل بمستشفى بشائر في الفترة من أواخر نوفمبر وحتى 15 من ديسمبر 2013م، تم تجميع البيانات باستخدام استمارة تم تصميمها للدراسة. تم تحليل البيانات باستخدام برنامج تحليل البيانات (SPSS). أظهرت النتائج أن 57.5% من عينة الدراسة كانت إجاباتها صحيحة عن تعريف ضغط الحمل، وأن 68% أجابوا صحيحة غير كاملة عن علامات ضغط الحمل. 67.2% لا يعرفن اعراض ضغط الحمل. 74.2% من أفراد العينة لا يعلمون تشخيص ضغط الدم و56.6% منهم لا يعرفون طرق علاجه. و65% منهم يعلمون دور الممرضين والممرضات تجاه الوقاية والعلاج من ضغط الحمل. 80% من أفراد العينة كانوا أجابتهم صحيحة غير مكتسبة من الأعراض الواقائية من ضغط الحمل (89.6% و80.8%) من أفراد العينة لا يعرفن المضاعفات ضغط الحمل على الأم والجنين على التوالي. 65.6% من عينة الدراسة يمارسن العادات الصحية لمنع حدوث ضغط الحمل. 55.2% من أفراد العينة يملأن الدعم النفسي والاجتماعي الكافي أثناء الحمل. 80.8% من أفراد العينة يتزمن بأخذ الدواء الموصوف بانتظام. 89.6% يمارس التمارين الرياضية بانتظام. خلصت الدراسة أن وعي السيدات الحولام تجاه ضغط الحمل غير كاف. أوصت الدراسة إلى عمل برامج صحية تثقيفية ودورية للأمهات عن ضغط الحمل بالمستشفى بصورة خاصة والمجتمع بصورة عامة.
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<td>Hypertensive Disorders of Pregnancy</td>
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<td>PIH</td>
<td>Pregnancy Induced Hypertension</td>
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<td>WHO</td>
<td>World Health Organization</td>
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<td>USA</td>
<td>United States of America</td>
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<td>UK</td>
<td>United Kingdom</td>
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<td>SPSS</td>
<td>Statistical Package of Social Science</td>
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<td>CBC</td>
<td>Complete Blood Count</td>
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<td>LFT</td>
<td>Liver Function Test</td>
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<td>RFT</td>
<td>Renal Function Test</td>
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<td>HELLP</td>
<td>Haemolysis Elevated Liver Enzymes and low Platelets</td>
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<td>U/S</td>
<td>Ultra Sonography</td>
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<td>ARDS</td>
<td>Acute Respiratory Syndrome</td>
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<td>IUFGGR</td>
<td>Intra Uterine Foetal Growth Retardation</td>
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<td>IUFD</td>
<td>Intra Uterine Foetal Death</td>
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<td>ABC</td>
<td>Airway, Breathing, Circulation</td>
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<td>B.P</td>
<td>Blood Pressure</td>
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Chapter One

Introduction
1-INTRODUCTION

1-1: Background:
Hypertension is one of the most common if not the commonest medical complication in pregnancy (Davey, DA. 2002). Ninety-nine percent of maternal deaths occur in developing countries, most could have been prevented (WHO. 2000), and the maternal mortality ratio was 47.3 per 100,000 live births. The main causes of death were hemorrhage (30.9%), pre-eclampsia/ eclampsia (28.2%), and septic shock (10.9%) (Sibai, BM. 2004). Hypertensive disorders in pregnancy are found to be the greatest single cause of maternal mortality (Dekker, GA. 2001) (Duley, L. 2002). Hypertension has been estimated to complicate 5% of all pregnancies and 11% of first pregnancies. Half of the pregnant women with hypertension have pre-eclampsia. Hypertensive disorders account for up to 40,000 maternal deaths annually (Sibai, BM. 2004). About 1% of pregnancies are complicated by pre-existing hypertension, 5% to 6% by gestational hypertension without proteinuria (half of which presents preterm), and 2% by pre-eclampsia (Magee, et al. 2009). Apart from causing mortality, pre-eclampsia and eclampsia are associated with severe maternal and perinatal morbidity like intrauterine growth retardation, premature delivery, and early neonatal death. The increase in women awareness regarding pregnancy-induced hypertension leads to decrease in maternal mortality and morbidity.

1-2: Problem statement:
Worldwide: Hypertensive disorders in pregnancy are found to be the greatest single cause of maternal mortality (Dekker, GA. 2001) (Duley, L. 2002). Hypertensive disorders of pregnancy were responsible for 6% of the burden of all maternal conditions, 13% of all maternal deaths. Apart from causing mortality, pre-eclampsia and eclampsia are associated with severe maternal and perinatal morbidity like intrauterine growth retardation, premature delivery, and early neonatal death. Studies show that pregnant women lack adequate knowledge about preeclampsia. This knowledge could potentially prevent pregnancy complications and prevent maternal deaths (Oyira et al. 2009; East et al. 2011).
**In Developed Countries:** In USA and UK, as an example for developed countries, showed that in USA maternal morbidity due to pre-eclampsia is 13.5% and mortality rate is 10%, whereas maternal morbidity rate due to eclampsia is 18% and mortality rate is 13.5%. In U.K maternal morbidity due to pre-eclampsia is 16.5% and mortality rate is 11%, whereas maternal morbidity rate due to eclampsia is 12% and mortality rate is 11%(Vijay,Z.2000) Das,G.2003).

**In Developing Countries:** Ninety-nine percent of maternal deaths occur in developing countries, most could have been prevented. The main causes of death were hemorrhage (30.9%), pre-eclampsia/ eclampsia (28.2%), and septic shock (10.9%)(WHO.2000) (Sibai,BM.2004).

**In Sudan:** Hypertensive disorders of pregnancy are common in Sudanese pregnant women as observed by practicing doctors, although to our knowledge there is no published data of its prevalence in Sudan except in Eastern Sudan where pre-eclampsia/eclampsia accounts for 4.2% of the obstetric complications and represents 18.1% of the direct causes of maternal deaths(Ali,A.2011) (Ali,A.2012).Studies on the incidence of hypertensive disease in pregnancy in most developing countries, including Sudan, are scarce. Adding to that, limited literatures exist on how aware the pregnant women regarding hypertension in pregnancy and its preventive measures in developing countries where maternal deaths are high. Recent evidence suggests that part of the problem is inadequate knowledge, negative attitude and lack of preventive practices among pregnant women. Also, health system factors which include lack of equipment and supplies, drugs, low knowledge and skills among providers, and/or poor referral system; also play an important part. Maternal deaths could be prevented if women were able to have adequate awareness towards attending antenatal clinic, and utilize good quality services, especially when complications arise (Lindheimer, MD.2004).

**1-3: Justification and Rationale:**

As it has been clarified previously that pregnancy induced hypertension and its related diseases are still one of the major obstetrical problems in developing countries, including Sudan, and preventive measures are still the main protector against its disastrous morbidity and mortality. Thus, I investigated objectively pregnant women’s awareness towards hypertensive disorders in pregnancy in a
developing country like Sudan. This is an important because it gave baseline information about the level of awareness of pregnant women on hypertension in pregnancy. The information were vital for health managers of maternal and newborn programs because it showed where resources and efforts should be directed in order to improve outcomes of pregnancies in developing countries, for example, by providing antenatal courses for pregnant women or women who intend to become pregnant on how to recognize it early and take an action towards it.

1-4: Objectives:

1-4-1: General objective:
To assess the awareness of Pregnancy Induced Hypertension among pregnant women in Bashayer University Hospital, Khartoum State, Sudan during the period of study.

1-4-2: Specific objectives:

✓ To assess the awareness among pregnant women regarding of Pregnancy Induced Hypertension during the period of study 1\textsuperscript{st} of November to 15\textsuperscript{th} of December, 2013.

✓ Identify women’s knowledge to perform proper care of regarding pregnancy-induced hypertension during pregnancy during the period of study.
Chapter Two

Literature review
2. LITERATURE REVIEW

Pregnancy is one of the wonderful and noble services by nature, no woman shrink. Pregnancy is a normal physiological process and not a disease, but it is associated with certain risks to the mother and for the infant she bears. These risks are common in every society and every setting. But in developed countries these risks have been largely overcome because every pregnant woman has access to special care. Although many pregnant women with high blood pressure have healthy babies without serious problems, high Blood Pressure can be dangerous for both the mother and foetus. However some women develop high blood pressure while they are pregnant often called gestational hypertension, the effect of high blood pressure can harm the mother’s kidneys and other organs and it can cause low birth weight and early delivery.

2-1: Definitions of spectrum of Hypertensive disorders of pregnancy (HDP):

2.1.1. Chronic hypertension: Hypertension prior to conception, or diagnosed before 20th week of gestation which does not resolve postpartum. Called ”essential hypertension” if there is no underlying cause, and ”secondary hypertension” if there is an underlying cause (Moodley, J. 2008).

2.1.2. Pre-eclampsia/eclampsia: Pre-eclampsia is a systemic disease with hypertension accompanied by proteinuria after 20th week of gestation. Eclampsia defined as the occurrence of seizures in pre-eclampsia (Danso, KA. 2010).

2.1.3. Pre-eclampsia superimposed on chronic hypertension: Describes hypertensive women who develop new onset proteinuria before 20th week of gestation, or sudden uncontrolled hypertension (Peters, RM. 2008).

2.1.4. Gestational hypertension or pregnancy-induced hypertension (PIH): High blood pressure after mid-pregnancy without
proteinuria: this diagnosis is used only during pregnancy with definitive diagnosis made post-partum(Peters,RM.2008).

N.B. Even though PIH can occur as early as 20 weeks as started in the definition, it more commonly occur beyond 24 to 28 weeks (peters, RM, 2008).

**2-2: Etiology and pathogenesis:**

Preeclampsia is a disorder of placental development thought to arise from a mismatch between utero-placental supply and foetal demands. The resulting placental release of biologic factors causes systemic maternal endothelial cell dysfunction, vasospasm, increased platelet activation and subsequent activation of the coagulation system in the microvasculature, and pathologic vascular lesions in multiple organs leading to end-organ complications like severe hypertension, eclampsia, pulmonary edema, and HELLP syndrome (hemolysis, elevated liver enzymes, and low platelets count) (Freedman,LP.2001). Hypertensive diseases of pregnancy are characterized by multisystem involvement, with complications commonly occurring in the renal, hepatic, cardiovascular, and hematologic and central nervous systems. Early detection and multidisciplinary treatment is important, together with obstetric intervention (Peters,RM.2008). Also, placental abruption, preterm delivery, perinatal death, small for gestational age infants, and neonatal respiratory distress syndrome have all been reported to occur more commonly among women who develop severe gestational hypertension without proteinuria than among women who develop proteinuria without severe hypertension(Magee,et,al.2009).

**2-3: Diagnosis:**

Blood pressure measurement and urine analysis are the mainstay of the diagnosis and monitoring of hypertensive disease during pregnancy(Danso, KA.2010).
Early detection of hypertension requires accurate measurement of the woman's blood pressure. A professional nurse should carefully do this task, which too often is left to unlicensed assistant personnel. Hypertension is arbitrarily defined as a sustained blood pressure of ≥140/90 mm Hg, regardless of gender or pregnancy status (Cnossen, JS. 2008). Severe hypertension is defined as a systolic blood pressure ≥160 to 170 mm Hg and/or diastolic blood pressure ≥110 mm Hg (Magee, et al. 2009). A meta-analysis from British Medical Journal states that mean arterial pressure is a better predictor for pre-eclampsia than systolic blood pressure, diastolic blood pressure, or increased blood pressure. In spite of this, blood pressure measurements at the first antenatal visit for healthy normotensive women in the first and second trimester do not help to predict pre-eclampsia (Cnossen, JS. 2008).

2-4: Risk factors:
1. Mother's age younger than 20 or older than 40
2. African-American race
3. First pregnancy,
4. Multiple pregnancies
5. Molar pregnancy
6. Pre-existing hypertension, diabetes, renal disease, or antiphospholipid syndrome
7. Daughter and sister of women with a past history of gestational hypertension.

2-5: Symptoms:
1. Severe frontal headache
2. Rapid weight gain
3. Blurred vision
4. Abdominal pain

2-6: Signs (beside high blood pressure):
1. Facial and peripheral edema
2. Jaundice
3. Right upper-quadrant tenderness
4. Hyper-reflexia
5. Decreased visual acuity (due to retinal detachment, retinal vasospasm, and/or light Sensitivity)

NB. Blood pressure should be measured at certain intervals on different days to establish the average measure(livestrong.2010)

2-7: Investigations:

- Urine testing for proteins (quantitatively and qualitatively).
- Liver and kidney function tests.
- Blood clotting tests.
- Complete Blood Count

NB. Proteinuria is a sign of renal damage and establish diagnosis of pre-eclampsia, while impairment in the remained investigations is a sign of impending eclampsia(livestrong.2010).

2-8: Treatment:

1. Antihypertensives:

Most antihypertensive agents are safe, except for angiotensin-converting enzyme inhibitors (teratogenic and fetotoxic) and Antenolol (increased risk for small for gestational age infant) (Cnossen,JS.2008).

The first-line antihypertensive treatment during pregnancy if chronic hypertension exists is methyldopa. The first-line antihypertensive treatment during pregnancy if pre-eclampsia exists is labetalol.

2. Anti-pre-eclamptic drugs:

Low dose aspirin, and calcium supplementation.

3. Anti-eclamptic drugs:

Magnesium sulphate can prevent and control eclamptic seizures.

2-9 WHO’s guidelines for manangement of PIH, pre-eclampsia, and eclampsia (WHO.2009):

Pregnancy-induced hypertension (PIH):
To diagnose pregnancy-induced hypertension (PIH) she must fulfill the following criteria;

- The pregnant woman is past 20\textsuperscript{th} week of pregnancy
- She has an average blood pressure reading greater than 140/90mmHg
- She had no high blood pressure before becoming pregnant
- She carries no symptoms or signs of pre-eclampsia

The woman is usually managed as an outpatient.

- Diet (less sodium, eating fish, fruits and veggies)
- Supplements - calcium, magnesium, zinc
- Anti hypertensive drugs
- Light Physical exercise and relaxation
- Lifestyle changes(quitting smoking and drinking, reducing stress and workload)
- Delivery/giving birth
- Weekly follow up at home or local clinic to:
  \begin{itemize}
  \item monitor blood pressure, urine (for proteinuria) and fetal condition (Fetal Movement Count, Non-Stress Testing, Biophysical Profile, Doppler Flow Study)
  \item Check if she has severe headache, visual disturbances or abdominal pain.
  \end{itemize}
- Counsel the woman and her family about the danger signs of severe preeclampsia, ensuring they know the importance of obtaining immediate medical help if any of these signs develop.

- If the blood pressure decreases to normal levels and there are no other complications, the condition has stabilized and the woman should be allowed to proceed with normal labour and childbirth.

- If the blood pressure rises, however, and/or proteinuria develops, or there is significant foetal growth restriction or foetal compromise, treat as for pre-eclampsia.

**Mild pre-eclampsia:**

Diastolic blood pressure is between 90-110 mmHg and there is up to 2+ of protein in the urine. Refer this woman to a hospital.
1. If gestation is less than 37 weeks:
   If signs remain unchanged or normalize, follow up twice weekly as an outpatient.
   ✓ Monitor weight, blood pressure, urine (for proteinuria), reflexes and fetal condition (Foetal Movement Count, Non-Stress Testing, Biophysical Profile, Doppler Flow Study)
   ✓ Counsel the woman and her family about danger signs of severe preeclampsia and eclampsia.
   ✓ Encourage additional periods of rest, and to eat a normal diet.
   ✓ Do not give diuretics, anticonvulsants, antihypertensives, sedatives or tranquillizers.
   If there are signs of growth restriction, consider an early delivery; if not, continue hospitalization until term.
   If urine protein level increases, manage as severe pre-eclampsia.

2. If gestation is more than 37 weeks:
   If there are signs of foetal compromise, assess the cervix and expect delivery.
   If the cervix is favourable (soft, thin, partly dilated) = rupture membranes with an amniotic hook or a Kocher clamp and induce labour using oxytocin or prostaglandins.
   If the cervix is unfavourable (thick, firm and closed) = ripen the cervix using prostaglandins and insert a Foley catheter and deliver the woman by caesarean section.

**Severe pre-eclampsia and eclampsia:**
In severe pre-eclampsia: delivery should take place within 24 hours of the onset of the symptoms.
In eclampsia: delivery should take place earlier, within 12 hours of the onset of convulsions.

**NB.** An article from Current Hypertension Reports states that there is consensus that blood pressure should be treated when it is sustained at ≥160 to 170 mm Hg systolic and/or ≥110 mm Hg diastolic because of the short term risk of maternal vascular damage, particularly stroke. There is no consensus regarding management of non-severe hypertension (Lindeberg, et al. 2001).

**2-10: The management of eclampsia:**
1. Making sure the airways are clear and the woman can breathe.
2. Controlling the fits (drug of choice is magnesium sulphate).
3. Controlling the blood pressure (drug of choice is hydralazine).
4. General care and monitoring, including controlling fluid balance.
5. Delivering the baby.
6. Monitoring carefully to prevent further fits and identify complications (like intracerebral haemorrhage and DIC).

WHO states that magnesium sulphate is the drug of choice for both prevention and treatment for eclampsia (WHO.2009).

A review from European Journal of obstetrics, gynecology and reproductive biology looked at different methods to reduce maternal and perinatal mortality in rural and peri-rural settings. One of the settings was Nigeria. In Nigeria, professional midwives were trained in interpersonal communication and lifesaving obstetric skills, while referral hospitals were refurbished and equipped. That made maternal deaths decline among all causes (Bhutta, ZA.2008).

2-10: Nurse role for management of PIH, pre-eclampsia, and eclampsia (WHO.2009):

Goals:
- Be able to perform activities of daily living without excessive fatigue.
- Identify strategies to reduce anxiety.
- Maintain optimal functioning within the confines of the visual impairment.
- Maintain orientation to environment.
- The patient's fluid volume will remain within normal parameters.
- Verbalize fears and concerns.
- The patient's urine output will remain within normal limits.
- Demonstrate adaptive coping behaviours.
- Exhibit signs of adequate cerebral and peripheral perfusion.
- Avoid complications

Nursing Interventions
- Assess, report and record signs of progress
- Record BP in both arms as well as lying, sitting and standing comparison
- Inspect extremities and neurological function
- Schedule rest periods
- Quiet, calm environment
- Emotional support
- Give medications as ordered
- Weight daily
- Dietary changes if necessary: Low fat diet along with sodium restriction may be necessary; Watch potassium if on diuretic

➤ **If seizure activity occurs**

- Stay with the patient, protect the woman from injury without using force; Do not restrain extremities
- Open airway, Oxygen, magnesium sulfate IV; diazepam if needed
- Turn the head to the side to prevent aspiration
- Ensure bed rails are cushioned
- Avoid insertion of airways and padded tongue blades
- Record onset activity and duration of seizure
- Call physician once over, evaluate vital signs and fetal heart rate
- Reduce stimuli in room such as bright lights, noise
- When stable induce labor
<table>
<thead>
<tr>
<th><strong>Intervention</strong></th>
<th><strong>Rationale</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Measure BP in both arms and thighs 3 times with 3-5 minutes apart while the patient is at rest, then sitting and standing</td>
<td>Identify whether the patient is hypertensive, as well as to have a baseline data for progression assessment</td>
</tr>
<tr>
<td>Observe skin color, moisture, temperature and capillary refill</td>
<td>Pallor and delayed capillary may indicate peripheral vasoconstriction</td>
</tr>
<tr>
<td>Note and assess for edema</td>
<td>Edema may indicate heart failure, renal or vascular impairment</td>
</tr>
<tr>
<td>Provide rest full environment and minimize noise</td>
<td>Reduce sympathetic stimulation and promotes relaxation</td>
</tr>
<tr>
<td>Placement of a Foley catheter</td>
<td>Observe urine output/ strict input</td>
</tr>
<tr>
<td>Padding of bed side rails</td>
<td>Protect mother in case of seizure activity</td>
</tr>
<tr>
<td>Maintain activity restrictions</td>
<td>Reduce physical stress and tension that affect blood pressure</td>
</tr>
<tr>
<td>Instruct relaxation techniques and guided imagery</td>
<td>Reduce stressful stimuli and produce calming effect which resolve high BP</td>
</tr>
<tr>
<td>Advise patient to avoid foods high in sodium, such as dried fish, sea foods and salt</td>
<td>High sodium intake may cause water retention which can lead to increase BP</td>
</tr>
<tr>
<td>Administer medications as prescribed, such as Methyldopa</td>
<td>Reduce BP</td>
</tr>
<tr>
<td>Assessment of IV magnesium</td>
<td>Deep tendon reflexes are absent, respiratory rate &lt; 12, or urine output &lt; 30cc/hr&gt; toxicity may have occurred, calcium gluconate is given rapidly to reverse the overdose</td>
</tr>
<tr>
<td>Ensure emergency equipment is nearby</td>
<td>For seizure treatment</td>
</tr>
<tr>
<td>Refer patient to dietician about dietary plan</td>
<td>Find alternative food preparation to meet the patient needs</td>
</tr>
</tbody>
</table>
2-11: Complications of hypertensive diseases in pregnancy 
*(Livestrong. 2010)*:

- Kidney Damage
- Liver Damage
- Danger Seizure
- Abruptio Placentae
- Uterine Problem
- Poor foetal growth
- Still Birth
- preterm delivery
- small for gestational age infant
- neonatal respiratory distress syndrome
- Death of the Mother and Fetus.

2-12: Preventive measures of hypertensive diseases in pregnancy 
*(Kwast, BE.2000)*:

- Early detection of the disease
- Regular check-up
- Education of the medical staff and the pregnant women about the disease.

2-13: Hypertensive disorders of pregnancy (HDP)epidemiology:

2-13-1: Worldwide:

Hypertensive disorders of pregnancy (HDP) represent a group of conditions associated with high blood pressure during pregnancy, proteinuria and in some cases convulsions. The most serious consequences for the mother and the baby result from pre-eclampsia and eclampsia. Eclampsia is usually a consequence of pre-eclampsia consisting of central nervous system seizures which often leave the patient unconscious; if untreated it may lead to death. The long-term sequels of both pre-eclampsia or eclampsia are not well evaluated, and the burden of hypertensive disorders of pregnancy stems mainly from deaths. Hypertensive disorders of pregnancy were responsible for 6% of the burden of all maternal conditions. It was estimated that deaths due to hypertensive disorders of pregnancy represented 13% of all maternal deaths.
Table No:1. Incidence of Pregnancy induced Hypertension in world wide.

<table>
<thead>
<tr>
<th>COUNTRIES</th>
<th>PRE-ECLAMPSIA</th>
<th>ECLAMPSIA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Morbidity Rate</td>
<td>Mortality Rate</td>
</tr>
<tr>
<td>U.S.A</td>
<td>12% - 15%</td>
<td>9% - 11%</td>
</tr>
<tr>
<td>U.K</td>
<td>15% - 18%</td>
<td>10% - 12%</td>
</tr>
<tr>
<td>INDIA (as one of developing countries)</td>
<td>15% - 23%</td>
<td>15% - 17%</td>
</tr>
</tbody>
</table>

The pooled incidence of pre-eclampsia for developing countries was estimated to be 3.4%. Incidence for eclampsia from the systematic review was 2.3% of pre-eclampsia cases for developing regions and 0.8% for developed regions (Vijay, Z. 2000) Das, G. 2003).

2-13-2: In developing countries:

>60% of maternal deaths occurred in the postpartum period;

- 45% of postpartum deaths occurred within 1 day of delivery,
- >65% within 1 week,
- >80% within 2 weeks.
- 80% of postpartum deaths caused by obstetric factors occurred within 1 week (American pregnancy. 2010).

2-14: Previous Studies:

2-14-1: Worldwide:

Hypertensive disorders in pregnancy are found to be the greatest single cause of maternal mortality (Dekker, GA. 2001). Hypertensive disorders of pregnancy were responsible for 6% of the burden of all maternal conditions. It was estimated that deaths due to hypertensive disorders of pregnancy represented 13% of all maternal deaths.

Half of the pregnant women with hypertension have pre-eclampsia. Hypertensive disorders account for up to 40,000 maternal deaths annually (Sibai, BM. 2004).
Apart from causing mortality, pre-eclampsia and eclampsia are associated with severe maternal and perinatal morbidity like intrauterine growth retardation, premature delivery, and early neonatal death.

2-14-2: In Developed Countries:

Incidence for eclampsia from the systematic review was 0.8% for developed regions (Vijay,Z.2000) Das,G.2003). In USA and UK, as an example of developed countries, showed that in USA maternal morbidity due to pre-eclampsia is 12% to 15% and mortality rate is 9% to 11%, whereas maternal morbidity rate due to eclampsia is 15% to 21% and mortality rate is 12% to 15%. In U.K maternal morbidity due to pre-eclampsia is 15% to 18% and mortality rate is 10% to 12%, whereas maternal morbidity rate due to eclampsia is 11% to 13% and mortality rate is 10% to 12%(Vijay,Z.2000) Das,G.2003).

2-14-3: In Developing Countries:

Ninety-nine percent of maternal deaths occur in developing countries, most could have been prevented (WHO,2000), and the maternal mortality ratio was 47.3 per 100,000 live births. The main causes of death were hemorrhage (30.9%), pre-eclampsia/eclampsia (28.2%), and septic shock (10.9%) (Sibai,BM.2004).

- >60% of maternal deaths occurred in the postpartum period;
- 45% of postpartum deaths occurred within 1 day of delivery,
- >65% within 1 week,
- >80% within 2 weeks.
- 80% of postpartum deaths caused by obstetric factors occurred within 1 week(American pregnancy 2010).

2-10-4: In Sudan:

Hypertensive disorders of pregnancy are common in Sudanese pregnant women as observed by practicing doctors, although to our knowledge there is no published data of its prevalence in Sudan except in Eastern Sudan where pre-eclampsia/eclampsia accounts for 4.2% of the obstetric complications and represents 18.1% of the direct causes of maternal deaths(Ali,A.2011)

2-14-5: In Area of Study:

No similar study was conducted in that hospital as far as known.
Chapter Three

Materials and Methods
3. MATERIALS AND METHODS:

3-1: Study design:

This a descriptive hospital-based study was conducted aiming for assessing the awareness of pregnancy Induced Hypertension among women in antenatal care unit at Bashayer university hospital during the period from 1\textsuperscript{st} November to 15\textsuperscript{th} December 2013.

3-2: Study area:

The study was conducted at the Antenatal clinic of Bashayer University Hospital-Khartoum state-Sudan. Bashayer University Hospital was established in 2003 as part of Khartoum Medical College. It is situated in the southern part of Khartoum State as part of Awliaa Mountain Locality. It is in Alazhari city, bounded from the west and south by Mayo city, from the east by Eid Hussain city, and from the north by Block 25, alazhari city. It contains the following specialities; Internal Medicine, General/Surgery, Pediatric/Surgery, orthopedics, Obstetrics/Gynecology, Pediatrics/Nursery, Ophthalmology, Dentistry, Dialysis, Radiology, Psychiatry, Laboratory, and Blood Bank. The hospital contains 144 beds with 435 workers and average monthly admissions of 100 patients, and outpatient clinic visitors of 160.

Regarding the Obstetrics and gynaecology department, it has 23 beds with about 50 workers, 5 consultants. It provides the following services; emergency department, labour room, long and short stay admissions, outpatient clinic, and family planning clinic. It has an average rate of 320 delivery per month (normal or operative).
3-3: Study population:

3-3-1: Inclusion Criteria:
All co-operative pregnant women who attend the obstetrics and gynaecology outpatient clinic in the period from 1/11/2013 to 15/12/2013 were targeted.

3-3-2 Exclusion Criteria
Non-pregnant women who attend the obstetrics and gynaecology outpatient clinic in addition to un co-operative women in the period from 1/11/2013 to 15/12/2013.

3-3-3: Sample size and sampling method:
Convenience sampling was used. Co-operative pregnant women who attend the clinic during the study period were invited to participate. 125 pregnant women were interviewed.

3-4: Data collection tools:
After obtaining permission from hospital authorities and after formal consent from the respondents, data was collected through an interview using a questionnaire (with closed ended questions) structured to assess awareness among pregnant women towards hypertensive disorders during pregnancy.

The questionnaire was given to the supervisor for elimination of non-essential questions. The questionnaire was in Arabic language to be understandable to each respondent.

3-5: Data analysis:
Each day the questionnaire was checked, and data entry was done on a weekly basis. The data was transferred to a master sheet to assist analysis.
Descriptive statistics were used to summarize the data including frequency and percentage. Tables and charts were used to present summarized data. Analysis was done using SPSS version 19.0.
Chapter Four

Results & Discussion
4.1 RESULTS

Figure 1: Distribution of the study sample according to their age.

Figure (1) illustrated that 68% of study sample were between 20 to 29 years of age.
Figure 2: Distribution of the study sample according to their residence.

Figure (2): illustrated that 90.4% of study sample were living in the city.
Figure 3: Distribution of the study sample according to their religion.

Figure(3): illustrated that 92.8% of study sample were Muslims.
Figure 4: Distribution of the study sample according to their education level.

Figure(4): illustrated that 22.4% of study sample were illiterate, 48% were educated till primary education.
Figure 5: Distribution of the study sample according to their occupation.

Figure (5): illustrated that 98.4% of study sample were housewives.
Figure 6: Distribution of the study sample according to their economical status.

Figure (6): illustrated that 62.4% of study sample had an average economic status.
Figure 7: Distribution of the study sample according to their parity.

Figure (7) illustrated that 74.4% of study sample were multigravida.
Table 2: Distribution of the study sample according to their knowledge regarding to definition of Pregnancy-induced hypertension (PIH).

Table (2): revealed that 57.5% of study sample responded correctly regarding PIH definition.

<table>
<thead>
<tr>
<th>Item</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct Answer</td>
<td>72</td>
<td>57.5%</td>
</tr>
<tr>
<td>Wrong Answer</td>
<td>13</td>
<td>10%</td>
</tr>
<tr>
<td>Do not know</td>
<td>40</td>
<td>32.5%</td>
</tr>
<tr>
<td>Total</td>
<td>125</td>
<td>100%</td>
</tr>
</tbody>
</table>
Table 3: Distribution of the study sample according to their knowledge regarding Cause of PIH.

<table>
<thead>
<tr>
<th>Item</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct Answer</td>
<td>3</td>
<td>2.4%</td>
</tr>
<tr>
<td>Wrong Answer</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Do not know</td>
<td>122</td>
<td>97.6%</td>
</tr>
<tr>
<td>Total</td>
<td>125</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table (3): showed that 97.6% of pregnant women do not know the cause of PIH.
Table 4: Distribution of the study sample according to their knowledge regarding the symptoms of PIH.

<table>
<thead>
<tr>
<th>Item</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct Complete Answer</td>
<td>2</td>
<td>1.6%</td>
</tr>
<tr>
<td>Correct incomplete Answer</td>
<td>39</td>
<td>31.2%</td>
</tr>
<tr>
<td>Do not know</td>
<td>84</td>
<td>67.2%</td>
</tr>
<tr>
<td>Total</td>
<td>125</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table (4): showed 67.2% of women do not know anyone of PIH symptoms.
Table 5: Distribution of the study sample according to their knowledge regarding signs of PIH.

<table>
<thead>
<tr>
<th>Item</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct Complete Answer</td>
<td>1</td>
<td>0.8%</td>
</tr>
<tr>
<td>Correct incomplete Answer</td>
<td>86</td>
<td>68.8%</td>
</tr>
<tr>
<td>Do not know</td>
<td>38</td>
<td>30.4%</td>
</tr>
<tr>
<td>Total</td>
<td>125</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table (5) revealed 68.8% of women responded with incomplete correct answers, as most of this group know that lower limb oedema is a sign of PIH.
**Table 6:** Distribution of the study sample according their knowledge regarding the methods of diagnosis of PIH.

<table>
<thead>
<tr>
<th>Item</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct Complete Answer</td>
<td>9</td>
<td>7.2%</td>
</tr>
<tr>
<td>Correct incomplete Answer</td>
<td>23</td>
<td>20%</td>
</tr>
<tr>
<td>Do not know</td>
<td>93</td>
<td>74.2%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>125</td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Table (6): showed 74.2% of women do not know anyone of diagnostic methods of PIH.
Table 7: Distribution of the study sample according to their knowledge regarding to treatment options of PIH.

Table (7) revealed that 65.6% of women do not know anyone of the treatment options of PIH.
Table 8: Distribution of the study sample according to their knowledge regarding maternal complications of PIH.

<table>
<thead>
<tr>
<th>Item</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct Complete Answer</td>
<td>1</td>
<td>0.8%</td>
</tr>
<tr>
<td>Correct incomplete Answer</td>
<td>12</td>
<td>9.6%</td>
</tr>
<tr>
<td>Do not know</td>
<td>112</td>
<td>89.6%</td>
</tr>
<tr>
<td>Total</td>
<td>125</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table (8): showed that 89.6% of women do not know anyone of the maternal complications of PIH.
Table 9: Distribution of the study sample according to their knowledge regarding foetal and neonatal complications of PIH.

no=125

<table>
<thead>
<tr>
<th>Item</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct Complete Answer</td>
<td>3</td>
<td>2.4%</td>
</tr>
<tr>
<td>Correct incomplete Answer</td>
<td>21</td>
<td>16.8%</td>
</tr>
<tr>
<td>Do not know</td>
<td>101</td>
<td>80.8%</td>
</tr>
<tr>
<td>Total</td>
<td>125</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table (9): revealed 80.8% of women do not know anyone of the foetal complications of PIH.
Table 10: Distribution of the study sample according to their knowledge regarding preventive measures of PIH.

<table>
<thead>
<tr>
<th>Item</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct Complete Answer</td>
<td>18</td>
<td>14.4%</td>
</tr>
<tr>
<td>Correct incomplete Answer</td>
<td>82</td>
<td>65.6%</td>
</tr>
<tr>
<td>Do not know</td>
<td>25</td>
<td>20%</td>
</tr>
<tr>
<td>Total</td>
<td>125</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table (10): showed that 65.8% of women responded with incomplete correct answers regarding preventive measures of PIH.
Table 11: Distribution of the study sample according to their knowledge regarding the role of hospital nurse or public nurse for PIH.

<table>
<thead>
<tr>
<th>Item</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct Complete Answer</td>
<td>3</td>
<td>2.4%</td>
</tr>
<tr>
<td>Correct incomplete Answer</td>
<td>81</td>
<td>64.8%</td>
</tr>
<tr>
<td>Do not know</td>
<td>41</td>
<td>32.8%</td>
</tr>
<tr>
<td>Total</td>
<td>125</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table (11): showed that 64.8% of women responded with incomplete correct answers regarding expected role of nurses to control PIH.
Table 12: Distribution of the study sample according to their knowledge regarding personal health care measures during pregnancy.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Yes</th>
<th>Percentage</th>
<th>No</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy food habits</td>
<td>110</td>
<td>88%</td>
<td>15</td>
<td>12%</td>
</tr>
<tr>
<td>Regular activities and mild exercise</td>
<td>112</td>
<td>89.6%</td>
<td>13</td>
<td>10.4%</td>
</tr>
<tr>
<td>Mood care and stress management</td>
<td>69</td>
<td>55.2%</td>
<td>56</td>
<td>44.8%</td>
</tr>
<tr>
<td>Adequate psychological support</td>
<td>69</td>
<td>55.2%</td>
<td>56</td>
<td>44.8%</td>
</tr>
<tr>
<td>Compliance of medications</td>
<td>76</td>
<td>60.8%</td>
<td>51</td>
<td>39.2%</td>
</tr>
<tr>
<td>Postpartum outpatient visit</td>
<td>36</td>
<td>28.8%</td>
<td>89</td>
<td>71.2%</td>
</tr>
</tbody>
</table>

Table (12) showed that 88% of study sample take care about eating variable balanced diet, and 89.6% practicing light exercise during pregnancy beside regular home activities. 55.2% of women know how much the mood and psychological health are important during pregnancy and they receive suitable psychological support from the family and the husband.

Although 60.8% of pregnant women are taking their prescribed medications regularly, only 28.8% of them present for outpatient clinic or the public nurse for follow-up after delivery.
4-2 Discussion:

From previous studies, PIH is considered to be a preventable disease, awareness of pregnant women and medical staff about it is an important parameter in its prevention. The results of the study assessed the pregnant women who attend the antenatal clinic of Bashayer University Hospital for awareness regarding the different aspects of PIH and health care in general, and it was compared to other studies to define the magnitude of the problem and the effective way to solve it.

Regarding the age of the study sample, 78% of women are below 30 years, which corresponds to a previous study conducted in India where 72.7% of sample were below 30 years (Namitha, Sudha and Sangeet. 2010). This wide range of age helps in assessing awareness in different age groups and the dominance of young women makes it possible to educate them as early as possible about PIH because its risk increases with age (Johansen. 1993).

In respect to parity of the study sample, 74.4% are multigravida and 25.6% are primagravida. This makes the sample representative to the study as PIH is common among primagravida and multigravida (Johansen. 1993).

By looking to the residence of the study sample, 90.4% are urban citizens while 9.6% are from rural areas. This has a negative influence on PIH control as urbanization increases risk to stresses and so for PIH development according to south African study (Seedat. 2000).

From the religious view, 92.8% of the study sample are muslims and 7.8% are Christians. This has a positive influence on PIH prevention, as praying has a spiritual effect that declines stress (Fallen and O-Neil 2003).

Regarding the educational level of the study sample, 22.4% are illiterate, 48% reached primary school, and only 17.6% reached secondary school. This distribution differs from Zimbabwean study (Inviolata. 2010), where 67% of the study sample reached secondary school. The lack of education increases the risk for PIH and ineffective blood pressure control (Chockalingam et.al. 2000) (as the women do not the early signs of PIH and unmotivated to take a preventive or interventional action to control it like visiting the clinic or public nurse (Adaba Travota and Lalu, 2001).
In the study sample, 98% of them are housewives, similar to the Zimbabwean women (88% housewives) (Inviolata. 2010), but lack of work does not affect PIH control or knowledge, as in that study 90% of women had above average knowledge about self-care and PIH.

Although 90% of the study sample have average or above average income, this does not affect the PIH awareness as most of the obstetrics services in Sudan are free or with low charge. In contradiction to other African countries, like Zimbabwe or Nigeria, where most women were unable to pay for those services (Inviolata. 2010).

By looking on the parameters of awareness about PIH, there is poor knowledge in most aspects and average knowledge in some others. In other words, 57.5% of women know the definition of PIH correctly, 70% know most or some of its early signs like lower limb oedema and rapid weight gain, and 80% know about most or all the preventive measures of PIH. But 97.6% do not know its suggested cause, 67.2% do not know any of its symptoms, 74.2% do not know how it is diagnosed, 65.6% do not know about its treatment options and 89.6% and 80.8% of them do not know any of its maternal and foetal complications respectively. These results similar to the Zimbabwean study (Inviolata. 2010), where 67.9% of women know the definition of PIH but lack knowledge about other aspects of it. On the other hand, it contradicts Indian study (Namitha, Sudha and Sangeet. 2010) where 90% of women had above average knowledge about PIH because 84% of them received antenatal informed lecture about it.

In spite of the poor knowledge about many PIH parameters, 65% of women know about most or all supposed role of nurses in hospital, clinic, or public regarding PIH control, in form of health education, diagnosis, treatment, and/or follow up. This is similar to Bindra study (Inviolata. 2010), which reflects the psychological preparation of unaware women to receive the mentioned care from hospital or public nurses as they are the most accessible and reliable members of the medical staff.

The study sample showed impressive care about pregnant health care in spite of mentioned results about PIH awareness. In other words, 88% of women have good food habits, 89.6% practice light exercise regularly, 55.2% know the importance of psychological health for pregnant women and receive adequate support from family and husband, 60.8% take prescribed medications regularly, but 28.8% only attend
outpatient clinic after delivery because most deliveries end smoothly. The knowledge and application of the above measures are important to blood pressure control, this is clarified from the studies that prove good psychological health decreases stress and high blood pressure (Carrol. 2000) (Bailey et.al.2001), and regular exercise helps in controlling blood pressure (Taylor-Tolbert et.al.2000). Also, medication compliance is important for blood pressure control as mentioned by Nicholas (Nicholas and Poreira, 2000).
Chapter Five

Conclusion & Recommendations
5. CONCLUSION AND RECOMMENDATIONS

5-1: Conclusion:

The study showed that the sample was representative in matter of number, age, and parity. The sample had positive factors for PIH like religion, economic status; and had negative factors for PIH control, like residency, and education.

Although the sample had average knowledge about PIH definition, self-care and prevention, it had poor knowledge on most other parameters of PIH which need urgent educational intervention. This is supported by the fact that a large number of the study sample understands the supposed role of nurse system for controlling PIH.
5-2: Recommendations:

1. Further research on PIH awareness in different areas of Sudan and defining the points that need intervention from the health system to control PIH and its complications.

2. Regular education and training to the nurses and midwives for PIH education based on updated researches and teaching techniques, to improve their knowledge about PIH and their communication skills with women, as they are the most closed medical staff for them.

3. Education for pregnant women in particular and married women in general about PIH and its all aspects in form of lectures, antenatal group sessions, and mass media. Beside that, regular notifications for pregnant women should be given in antenatal clinic regarding early signs and prevention measures of PIH.
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ANNEX:

جامعة الجزيرة
كلية العلوم التطبيقية
قسم تمريض صحّة المجتمع

بحث لنيل درجة الماجستير في تمريض صحّة المجتمع

إستمارة استبيان لمعرفة وعي وإدراك الأهمية عن ضغط الحمل المرددات على مستشفى بشائر الجامعي

ولاية الخرطوم - السودان

المجموعة الأولى

1. العمر
   □ أقل من 20 □ 20-29 □ 30 فأكثر

2. السكن
   □ المدينة □ الريف

3. الديانة
   □ المسيحية □ الإسلام

4. المستوى التعليمي
   □ غير متعلمة □ ابتدائي □ ثانوي □ جامعي □ فوق الجامعي

5. المهنة
   □ موظفة □ عاملة �□ ربة منزل

6. المستوى المادي
   □ فوق الوسط □ جيد □ ممتاز �□ متوسط

7. عدد مرات الحمل
   □ بكروة □ متعددة

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المجموعة الثانية: اختاري الأجابة/الأجوبة الصحيحة:

1) ضغط الحمل هو:
أ. ارتفاع ضغط الدم
ب. ارتفاع ضغط الدم بعد ½ فترة الحمل
ج. ارتفاع ضغط الدم مع ظهور زلال في البول
د. لا أعلم.

2) ضغط الحمل يحدث نتيجة لـ?
أ. اختلال تطور الشيمة
ب. انفصال الشيمة
ج. عدم توافق بين التغذية الشيمية وحوجة الطفل
د. لا أعلم.

3) أعراض ضغط الحمل?
أ. ظهور صداع وجهي حاد
ب. زيادة سرعة في الوزن
ج. زغالة النظر
د. لام حاد في البطن
ه. لا أعلم.

4) علامات ضغط الحمل?
أ. ارتفاع ضغط الدم
ب. تورم الوجه والاطراف
ج. ظهور صفرا في العيون
د. لا أعلم.
5. يتم تشخيص ضغط الحمل؟

أ. عبادة ضغط الدم.
ب. فحص البول عصقي.

ج. فحص البول و الدم.
د. لا أعلم.

6. علاج ضغط الحمل؟

أ. الإجهاض علاج.
ب. في المنزل.

ج. في العيادة الخارجية.
د. دخول المستشفى.

ه. لا أعلم.

7. من مضاعفات ضغط الحمل على الأم؟

أ. قصور الكلى.
ب. قصور الكبد.

ج. الشنجات الخطيرة.
د. انفصال المشيمة.

ه. لا أعلم.

8. من مضاعفات ضغط الحمل علي الجنين؟

أ. تأخر و ضعف نحو الجنين.
ب. الولادة المبكرة.

ج. متلازمة الجهاز التنفسي حديثي الولادة.
د. لا أعلم.
(9) الوقاية من ضغط الحمل؟
أ.المناعية الجيدة والمنظمة أثناء الحمل.
ب.الكشف المبكر للمرض.
ج.الوعي الصحي.
د.الكادر الصحي المؤهل.
ه.لا أعلم.

(10) دور المرضة أو الزائرة الصحية؟
أ.قياس و متابعة ضغط الدم.
ب.التأكد من خلو البول من الزلال.
ج.تقديم الدعم النفسي.
د.تقديم التنظيف الصحي.
ه.إعطاء العلاجات.
و.لا أعلم.

(11) الاهتمام بالصحة العامة أثناء الحمل:
أ.هل تقيمين بتوع الطعام في الكمية والنوعية؟
نعم لا
ب.هل تقومين بأعمال المنزلية بالإضافة لقليل من التمارين كالمشي أثناء الحمل؟
نعم لا
ج.هل تعلمين أهمية الراحة والصحة النفسية وتأثيرها على المرأة الحامل وطفلها؟
نعم لا
د.هل تقدمين الدعم النفسي والتشجيع من الأسرة والزوج؟
نعم لا
ه.هل تتناولين الدواء الموصوف لك بانتظام؟
نعم لا
و.هل تعادين الطبيب أو الزائرة الطبية بعد الولادة للمتابعة؟
نعم لا
<table>
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<td>≥ 30</td>
<td>C</td>
<td>R</td>
<td>I</td>
<td>C</td>
<td>I</td>
<td>P</td>
<td>S</td>
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<td>A/B</td>
<td>A/B</td>
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<td>A/B</td>
<td>A/B</td>
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<td>A/B</td>
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